

Perspective of Science Education in Nigeria

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Abstract: *There is a need, to imbibe the science culture in every Nigerian so as to have the proper and requisite foundation on which to develop our science and technology which will in turn develop the country. This study examines the perspective of science education in Nigeria, taking into cognizance the purpose and the 6-3-3-4 system of education in Nigeria. This is why great emphasis should be put on effective science education to help lay the needed foundation starting from the primary to, at least, the first year of the tertiary level for students of humanities. The general science taught in the lower forms of the secondary schools was a mere selection of some topics so selected. In most cases, the general science course degenerated into a course in biology with little of chemistry are hardly anything of substance, if at all, in physics. The government must design specific policies on science and technical education which must be implemented and sustained to promote science and technology curricula at each level of education. This, of course, must include increased funds which should be provided and properly utilised in the educational system. The interest of the teacher thus dictated the scope, content and emphasis of the course. Yet the general science course was supposed to be a preparatory course to the science subjects of the school system.*

Key words: *Nigeria, science education*

1. Introduction

According to Anyifite (2000), the trends in science education in the last 30 years have centred on personal involvement by the pupils. Before the curriculum reform projects were initiated in the United States in the late 1950s, the emphasis on science education was on the acquisition of factual knowledge. Then came Physical Education Committee (P.S.S.C.), Chemical Education Materials Study (CHEM Study), Chemistry Board Approach (CBA) and Biological Science Curriculum Study (BSCS) in the United States followed by Nuffield projects in the United Kingdom and then a wealth of other projects around the world including Nigeria. The aim of these projects was to give pupil the opportunity to be a scientist for the day-to-day, to experience how a scientist looks for evidence, how the scientist tests hypothesis. The approach dominated the curriculum reform up the early 1970s. Booth (1975) suggested the development of science education to include science for citizen, science for action and pure science. While Lewis (1979) explains that in democratic societies, citizens will have to make decisions which will ultimately affect their lives and many of these decisions will have strong scientific components. Preparation for this kind of decision-making inside the circle which is called “science for\ citizens”.

Science, according to the Concise Oxford Dictionary, is the pursuit of systematic and ordered knowledge. Yet, there are almost as many definitions of science as there are scientists; and there are certainly as many as there are philosophers of science. While the Science Teachers Association of Nigeria, STAN (1988), view science as part of human culture and social

institution. All around us are the products of science and their application to practical situation which is clearly evident. Indeed, no one talks of science without mentioning its social functions, just as no one can live the good life these days without the application of science. However, Brown (1980) looks at science as a process of social activity in which we seek to discover and understand the natural world not as we would prefer to imagine it as it really is. Shaibu (1993) also view science as some form of organized knowledge on which we can ascribe a sort of prescribed esoteric procedure for unraveling its nature and maintained that the term science cannot be used without associating it with technology. For some, the essence of science is objectivity; for others it may be creativity, reliability, its public availability, the fact that it is a social activity, or a revolutionary one, or, indeed, a cultural one. Perhaps it might be thought that in a world where human well-being is so obviously and closely related to scientific and technical knowledge, it is not important to enquire into exactly why scientific knowledge is so valuable or into how it differs from other forms of knowledge. Thus, the term “science and technology education” portray a somewhat symbiotic relationship. A definition of education is therefore necessary so as to marry them together. Education is a basic social and human need. Without it or with inadequate education, national development is inconceivable. Therefore, the nature or quality of science education can be judged only with reference to its enabling education to fulfill personal and social aspirations (Ahmed, 1978:109).

2. The Purpose of Science Curriculum in Nigeria

The purposes of science teaching seemed to be merely to satisfy the demands of the external examination syllabuses. Soon after independence, the need became more acute for the nation to have many more Nigerian trained personnel in several areas of the nation’s life. Educational opportunities gradually began to expand especially at the secondary school level. But one major handicap was the serious shortage of trained teachers both at the secondary schools and teacher training institutions. Such defects were identified in the contents and organisation of the science curriculum.

In the upper classes of the schools, the topics were in obedience to the stipulation of the examination body. The science curriculum at this level did not appear to meet the needs of the society which the schools served. As stated earlier, the science subjects were designed for a small fraction of the school population. Except for those who went further in the sciences on leaving school, the learning experiences acquired served little or not put pose in the students’ interaction in the society. No proper scientific skills and attitudes were acquired by the students. The orientation of the science courses and the teaching was the interaction of students with teachers, blackboards and textbooks. Learning was accomplished by recitation in majority of cases; but recitation violates sound learning principles.

In 1967, the Ford Foundation, through the Federal Ministry of Education, helped to establish the Comparative Education Study and Adaptation Centre (CESAC) at the University of Lagos. The main purpose of this center is to study the nation’s system of education, identify its defects and devise original solutions. These solutions must be dynamic to match the changing needs: and would be continually adapted to be responsive to the identified needs of the country. To do this involves a comparative study of past experiences and current practices within and outside the country. These must also be judiciously adapted to the identified needs and objectives of the nation. So far, the Centre has concentrated on curricula development for secondary schools. This is because of the crucial role which secondary education plays in providing a basis

for further education and for the development of skills and attitudes so vital for the produced innovations in science education at the secondary school level. It has also done similar work in social studies and home economics: and is doing same in technology and mathematics. At the government level, the new National Policy on Education has provided clear objectives of our education. Attempts are now being made to translate these into practical guidelines through, principally, the implementation committee on the National Policy on Education.

3. The 6-3-3-4 System of Education in Nigeria

The science curriculum in Nigeria, before and after independence in 1960 was characterized by so much defects that there was strong need for improvement. Mkpa (1987) observed that one of the most significant curriculum innovative experiment in Nigeria is the science curriculum development experiment being undertaken by the Comparative Education Studies and Adaptation center based in the University of Lagos.

The curriculum was inadequate and incapable of producing for the for nation quality of youth with the right orientations capable of salvaging the nation from the adverse economic effects of inadequate production of goods and services. For Nigeria, the historic national curriculum conference held from 8th - 12th Sept 1969 spurred various bodies including government agencies to develop science curricular for both primary and secondary levels of education, which brought about the new NPE of 1977 revised in 1981 which ushered in 6-3-3-4 system of education with the following

1. The Nigerian secondary schools project (NSSP) by the defunct comparative education study and adaptation centre (CESAC), now part of NERDC.
2. The Nigeria integrated science project (NTSP)
3. Basic science for Nigerian secondary school (BSNSS) by CESAC and Stain
4. Primary Education Improvement Project: Northern States Primary School Project (NSPSP) by the Institute of Education, Abu, Zaria
5. Science is Discovering: Mid-Western State Primary Science Project (MSPSP) by Abaraka College of Education.
6. Primary Education Improvement Project: Northern States primary science project (WSPSP) by the faculty of Education OAU.
7. African Primary Science Project (APSP) by the African Development Council
8. Lagos State Primary Science Project (LSPSP) by the Lagos State Ministry of Education.

4. Conclusion

There is a need, therefore, to imbibe the science culture in every Nigerian so as to have the proper and requisite foundation on which to develop our science and technology which will in turn develop the country. This is why great emphasis should be put on effective science education to help lay the needed foundation starting from the primary to, at least, the first year of the tertiary level for students of humanities. The general science taught in the lower forms of the secondary schools was a mere selection of some topics so selected. In most cases, the general science course degenerated into a course in biology with little of chemistry are hardly anything of substance, if at all, in physics. There was no attempt to show the relationship of some topics to the others; no effort was made either to relate the learning experiences of the students to their immediate environment and life encounters. When these students got to the upper classes, there was very little evidence of their exposure to science. The teaching of the general science was in most cases handled by a teacher with interests in biology. The government must design specific

policies on science and technical education which must be implemented and sustained to promote science and technology curricula at each level of education. This, of course, must include increased funds which should be provided and properly utilised in the educational system. In some cases, a person interested in chemistry took the courses; interest in physics was least considered. The interest of the teacher thus dictated the scope, content and emphasis of the course. Yet the general science course was supposed to be a preparatory course to the science subjects of the school system.

References

- Ahmed, R. (1979). Environment as in integrating fact in science education in J. Reay (Ed.). *new trends in integrated science teaching*. Paris: UNESCO.
- Anyifite, S. (2007). Social Perspective of Science Teaching, in Tambari: Kano. *Journal of Education*, 6(3): 117-123.
- Ameh, C. O. and Gyuse, E. (1989). Science and Technology in Nigeria: Pressure and Constraints". A paper presented at the 2nd Annual National conference on Science Teaching. University of Benin, Benin City.
- Booth, N. (1975). Inter Disciplinary Science. *Education and Culture*, 27: 22-30.
- Brown, G. (1980). Faith, Science, and the Future. *World Council of Churches*, 1: 31-41
- Concise Oxford Dictionary in English Language (2002), United Kingdom: Oxford University Press.
- Dold, T. (1986). The Technology System, in D. Lawton (Ed.). *School Curriculum Planning*, London: Hodder and Stoughton.
- Edward, V. and M.S. Levner (1975). *Readings in Science Education for the Elementary School*. (3rd Ed.). New York: Macmillan Publishing Co. Inc.
- Federation Government of Nigeria/UNICEF (1993). *Situation and Policy Analysis Basic Education in Nigeria National Report*.
- Henscke, D. T. (1984). Technology Education: Future Perspectives. *Science and Technology*, 1-101.
- Hurd, P. D. (1973). Integrated Science (2nd Ed.). *The Science Teacher*, 40: 18-19.
- Hurd, P. D. (1975). Science Technology and Society; New Goals for interdisciplinary Science Teaching. *The Science Teacher*, 27-30.
- Joint Comunique Review of Cooperation Between the Federal Republic of Nigeria and UNESCO signed in Abuja, Nigeria, 18th November, 2002.
- Ogunranti, A. (1982). *Media in Education*. Ile-Ife: University of life Press Ltd., Educational Technology. ACE Series. Ibadan: Heinemann. Educational Books (Nig.)
- Mpka, M.A. (1987). *Curriculum Development and Implementation*. Owerri: Totam Publishers Limited.
- Nash, M. (1987). *Science, Technology, and Society*, in D. Foster and R. Locks, (Eds), Teaching Science, 11-13, London: Croom Helm.
- Shaibu, A.A. (1973). The Humanistic View of Science and its Implication for Science Teaching in Schools. *STAN*, 28 (1 and 2): 132-133.
- STAN (1988). *Science Teachers Association of Nigeria, Science Teachers Handbook*. Lagos: Longman Nigeria Limited.